

THE WEATHER ELEMENTS.

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PRESSURE AND WINDS.

As has been the case during several months past, the atmospheric circulation during April, 1922, continued active, and cyclonic storms, particularly during the first two decades, moved eastward in rapid succession, principally from the southwestern districts.

Many of the cyclones did not reach wide proportions or extend as important storms into the more eastern districts; however, over the central and southern Great Plains and in the Ohio and middle Mississippi Valleys they gave copious precipitation on a number of dates.

The more important cyclones of the month occurred during the following periods: A storm central over the lower Ohio Valley at 8 a. m., March 31, had moved to the middle Atlantic coast by the morning of April 1, attended by moderate to heavy precipitation over nearly all districts from the Mississippi River eastward, with heavy snow in the northern portions of New York and New England, the depth at some points reaching 15 inches or more. The weather was mainly unsettled with low pressure and local rains over the interior and southwestern districts during the first week, and by the morning of the 8th a storm of considerable severity was central over the upper Mississippi Valley, with barometer readings as low as ever observed in April at points in Iowa and Missouri. This storm brought widespread rains over the central valleys, but lost energy after passing the Great Lakes, and moved to the eastward without material precipitation. This storm was quickly followed by a second one which likewise moved into the Great Lakes region, where it was central on the morning of the 11th, passing thence to the lower St. Lawrence Valley during the following two days. This storm likewise lost energy rapidly after passing over the Great Lakes, but high winds and low pressure marked its course over portions of the Great Plains, central valleys, and Great Lakes. Rains were general and frequently heavy from the Plains eastward, except over some southeastern districts, and more or less snow fell in the Rocky Mountains and adjacent regions. Disturbed conditions continued over the central valleys and most eastern districts until about the beginning of the last decade, when higher barometric pressure developed and more settled weather prevailed until near the end of the month, except for occasional local rains, particularly in the Southern Plains region, where about the 24th to 25th some phenomenal rains occurred, Fort Worth, Tex., reporting nearly 10 inches in less than 48 hours. The last few days of the month brought general rains over most districts from the Southern Plains eastward.

Anticyclonic areas were confined largely to the districts from the Great Lakes eastward during the greater part of the first two decades. By the end of the second decade, however, an anticyclone of considerable proportions had moved from the Pacific coast region to the lower Mississippi Valley, and during the remainder of the month pressure was relatively high over most southeastern districts.

The average pressure for the month was above normal, as during the preceding month, over practically all portions of the United States and Canada, the only exception being a small area from southern Texas northwestward into Colorado and portions of Kansas. Over the far Northwest the averages were well above normal and also above those of the preceding month.

From the Ohio Valley southeastward to the coast, average pressures were well above the normal and this condition probably extended into the adjacent ocean, as the monthly mean pressure at San Juan, Porto Rico, was the highest of record.

Due to high pressure over the southeastern districts, the prevailing winds over much of the region from the Great Plains eastward had a strong southerly component, while high pressure over the far Northwest induced winds from westerly points over large areas from the Rocky Mountains to the Pacific.

High winds occurred over extensive areas in Kansas, Missouri, and portions of adjoining States on the 8th, and generally over the same region, but extending eastward into the middle Mississippi and Ohio Valleys, and over portions of the Great Lakes and Middle Atlantic States on the 10th and 11th. Winds were also high in the upper Mississippi Valley, over the Great Lakes, and along the Atlantic coast from New York northward on the 18th to 20th. At points on the Great Lakes the winds on the 19th and 20th were the highest ever observed in April.

On the Pacific coast, at Point Reyes Light, Calif., an average wind velocity of nearly 33 miles per hour was maintained throughout the month, the highest average ever recorded for April.

A list of the more important storms of the month appears at the end of this section.

TEMPERATURE.

Important changes in temperature were confined mainly to the first two decades of the month, notably on the 11th and 12th, when they amounted to 20° or more in 24 hours over a large area from the Southern Plains to the Great Lakes, and on the 18th and 19th over considerable areas from the middle Mississippi Valley eastward.

The coldest periods of the month, covering extensive areas, were about the 1st and 2d over the Mississippi Valley, the upper Lakes and portions of New England, and the South Atlantic States; about the 15th to 18th in most districts from the Rocky Mountains westward; and about the 22d to 24th in portions of the Ohio Valley and Middle Atlantic States.

Minimum temperatures were below zero over the more elevated districts of the western mountains, and were locally more than 10° below in some of the northern Rocky Mountain States. They were below freezing in all districts save along the South Atlantic coast, over Florida, and the immediate Gulf coast region, at the lower elevations of Arizona and over the coast districts of the Pacific States.

The highest temperatures were observed during the first decade over most States from the middle Plains eastward, about the middle of the second decade in the Southern States from Texas and Oklahoma eastward, and during the last decade from the Rocky Mountains westward.

As a whole the month continued warmer than normal, as has been the case for several months, over most districts from the Great Plains eastward. On the other hand, it continued colder than normal over the more western districts, where temperatures decidedly below normal have been the rule for a number of months.

In portions of the Plateau region cold weather was almost continuous, and the averages for the month were among the lowest of record for April.

PRECIPITATION.

The distribution of the precipitation during April, 1922, is graphically shown on Chart IV of this REVIEW.

In general the month had decidedly more rainfall than is normally received in April over a large part of the central valleys and portions of the near Southwest. This was particularly true from central Texas northeastward to the lower Ohio Valley, where the monthly amounts ranged up to as much as 18 inches, and in portions of Kansas, Oklahoma, and nearby points, the precipitation was the greatest of record for April. Precipitation was also above normal in the Rocky Mountain and Plateau regions, and locally in the South Atlantic States.

It was less than normal in most Atlantic coast sections, along the East Gulf coast, over the Florida peninsula, and generally over California, Oregon, and portions of adjoining States. In central and southern Georgia and generally over Florida, the month was distinctly dry, no precipitation occurring during the entire month in portions of southern Florida, and no material rains occurring over large areas in those States.

SNOWFALL.

As may be expected in April, snow occurred over a wide extent of the country, but the amounts were usually

small save in the mountain districts of the West and from the Lake Superior region westward and southwestward to the Dakotas and Iowa and over the northern portions of New York and New England.

In the western mountains snow was heavy, the total falls ranging up to 4 feet or more at some of the higher elevations in Colorado, Wyoming, and adjacent States, and nearly as heavy falls were reported from many of the higher elevations of the Plateau region. In the Cascades heavy snows were reported from the higher elevations of Washington, with somewhat less in Oregon. In the Sierra of California the amounts were usually about the average for April.

RELATIVE HUMIDITY.

For the country as a whole, the relative humidity was distinctly above normal, only a few localities having averages appreciably less. Notable excesses were reported from the Rocky Mountain and Plateau regions, and they were only slightly less in the Ohio, Mississippi, and lower Missouri valleys. Important negative departures were observed in the Great Valley of California, and there were small areas having humidity averages for the month less than normal in the Appalachian Mountains, the Middle Atlantic States, and the Florida peninsula.

Severe local storms.

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the annual report of the chief of bureau.]

Place.	Date.	Time.	Width of path.	Loss of life.	Value of property destroyed.	Character of storm.	Remarks.	Authority.
			<i>Yards.</i>					
Currie, Tex.....	3	11 A. m.				Wind and rain....	Several derricks wrecked, a theater and other buildings demolished. Loss estimated at thousands of dollars.	Times-Herald (Dallas, Tex.).
Pike County, Ala.....	5					Tornado.....	One person injured and a dwelling wrecked....	Official U. S. Weather Bureau.
Central Georgia.....	5	P. m.				Wind, rain, hail....	Heavy crop loss and considerable property damaged.	Macon Telegraph (Macon, Ga.).
Indianapolis, Ind.....	6					do.....	Two persons injured and several thousand dollars damage to property.	Indianapolis News (Ind.).
Woodward, Iowa (near).....	7			1	\$250,000	Tornado.....	Several persons injured and property damage heavy.	Belvidere Republican (Ill.).
Council Bluffs, Iowa.....	7				50,000	Hail.....	Greenhouses, windows, autos, and street-car windows damaged.	Do.
Janesville, Wis.....	7	A. m.				Electric and wind.	Property considerably damaged.....	The Capital Times (Madison, Wis.).
Northern Texas and southern Oklahoma.	8	A. m.		17		Tornadoes.....	Property loss heavy. Wire communication badly crippled and scores of persons injured. Damage estimated at hundreds of thousands of dollars.	Dallas Morning News (Tex.), Wichita Eagle (Kans.).
Nodaway County, Mo.....	8	P. m.				Wind.....	Principal damage to wire systems and farm buildings.	Daily Democrat (Maryville, Mo.), St. Joseph New-Press Mo.
Murphysboro, Ill.....	8	P. m.				do.....	Damage to barns and fences amounting to several thousand dollars.	Cairo Evening Citizen (Ill.).
Davenport, Iowa, and vicinity.	8-9					do.....	Telephone and telegraph service crippled, glass broken, trees down, and minor property damage from high wind.	Official U. S. Weather Bureau. The Democrat (Davenport, Iowa). Rock Island Argus (Ill.).
Denver, Colo. (near).....	9					Gale and snow....	Hundreds in autos marooned in roads suffer from severe cold.	The Post (Denver, Colo.).
Chicago, Ill.....	9					Gale.....	General damage done; several injured. Wind velocity, 48 miles.	Herald-Examiner (Chicago, Ill.). Official U. S. Weather Bureau.
Memphis, Tenn.....	10					Wind.....	Material damage to river craft, one building unroofed, and telegraph service out of use.	Chattanooga News (Tenn.).
Green, Clark, and Champaign Counties, Ohio.	10			1	100,000	Tornado.....	Extensive property damage; 5 persons injured...	Ohio State Journal (Columbus, Ohio).
Eastern Colorado.....	10					Wind and snow....	Railway and telephone service paralyzed.....	The Pueblo Chieftain (Pueblo, Colo.).
Springfield, Mo. (12 miles northwest of).	10			2	100,000	Tornado.....	Heavy property damage; many persons injured.	Official U. S. Weather Bureau.
Eastern Tennessee	10-11					Wind.....	Considerable minor damage.....	Do.
Kansas, Oklahoma, Missouri, Texas.	10-11			2	400,000	Wind and flood...	Heavy general damage; 7 persons injured.	Official U. S. Weather Bureau. Evansville Press (Ind.).
Monroe, Wis.....	11				100,000	Wind.....	12 barns damaged and many farm buildings wrecked.	Evening News (Monroe, Wis.) Official U. S. Weather Bureau.
Augusta County, Va.....	11					do.....	Silo damaged and also other farm buildings....	Staunton News-Leader (Va.).
Middle Tennessee.....	14	P. m.			300,000	do.....	Destruction of wide extent. Many buildings wrecked, several persons injured, and stock killed.	Official U. S. Weather Bureau.
Belleville, Ill.....	14	A. m.				do.....	School demolished and thousands of dollars damage to dwellings.	Belvidere Republican (Ill.).